

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of the Claims

Claims 1-2. (Canceled)
Claims 3-6. (Canceled)
Claim 7. (Canceled)
Claims 8-9. (Canceled)
Claims 10-14. (Canceled)
Claim 15. (Canceled)
Claim 16. (Canceled)
Claim 17. (Canceled)
Claims 18-26. (Canceled)
Claim 27. (Canceled)
Claims 28-29. (Canceled)
Claim 30. (Canceled)
Claims 31-34. (Canceled)
Claim 35. (Canceled)

36. (New) In a method of making a generally pot shaped sputter target having a first region defining a planar end wall or dome and a second region defining a sidewall connected to and extending from said first region to form an open end of said sputter target, the method of forming different crystallographic orientations in said first and second regions, the method comprising:

a. providing a hydroforming press having a platen, a housing holding a fluid filled bladder, and a mandrel;

b. providing a metallic blank having a given crystallographic orientation, said blank having a first region that, as a result of said forming, will define said first region of said target, said blank further having a second region that, as a result of said forming, will define said second region of said target;

c. placing said metallic blank between said mandrel and said bladder;

d. providing relative movement between said mandrel and said bladder to press said blank therebetween;

e. continuing to press said blank and cold working said blank in said second region of said blank thereby deforming said second region of said blank to about 35% or greater; and

f. releasing said blank from between said mandrel and said bladder thereby yielding a sputter target wherein said second region of said target has a crystallographic orientation that is different from said given crystallographic orientation and from the crystallographic orientation of said first region.

37. Method as recited in claim 36 wherein said bladder attains a pressure of up to about 15,000 psi during the pressing.

38. Method as recited in claim 36 wherein said pressing is conducted at room temperature.

39. Method as recited in claim 36 wherein the crystallographic orientation of said first region of said target is substantially the same as said given crystallographic orientation of said blank.

40. Method as recited in claim 39 wherein said blank is a high purity metal selected from the group consisting of titanium, copper, tantalum, and alloys thereof.

41. Method as recited in claim 40 wherein said metal is tantalum and said given crystallographic orientation of said blank is a mixed $\{111\}/\{100\}$.

42. Method as recited in claim 41 wherein said second region of said target has a mixed crystallographic orientation of $\{112\}/\{110\}$.

43. A method of forming a sputter target assembly having first and second sputtering surfaces with said first sputtering surface having a first crystallographic orientation and said second sputtering surface having a second crystallographic orientation, said method comprising:

a. providing a metallic blank having said first crystallographic orientation throughout, said blank having a first region thereof that, after said forming, will define said first sputtering surface of said target, said metallic blank also having a second region that, after said forming, will define said second sputtering surface of said target;

b. cold working said second region of said blank while pressing said blank into a desired shape, said cold working deforming said second region to about 35% or greater, to thereby form a sputter target wherein said first sputtering surface has said first crystallographic orientation and said second sputtering surface has said second crystallographic orientation.

44. Method as recited in claim 43 wherein said method is devoid of any heat treatment annealing so that said second region of said blank will not recrystallize.

45. Method as recited in claim 43 wherein said deforming is about 50% or greater.

46. Method as recited in claim 43 wherein said step of cold working said second region of said blank while pressing said blank is performed in a hydroforming apparatus operated at about room temperature.

47. Method as recited in claim 43 wherein said metallic blank is a high purity metal selected from the group consisting of titanium, copper, tantalum, and alloys thereof.

48. Method as recited in claim 47 wherein said metal is tantalum and said first crystallographic orientation of said blank is mixed $\{111\}/\{100\}$.

49. Method as recited in claim 48 wherein said cold working and pressing of said second region of said blank imparts a mixed crystallographic orientation of $\{112\}/\{110\}$ to said second region.

50. Method as recited in claim 49 wherein said sputter target has a generally pot shape and wherein said first surface of said target defines a dome and said second surface of said target defines sidewalls connected to and extending away from said dome.